

# Virginia Wildlife

JUNE 1979  
50¢



# Virginia Wildlife

Virginia Wildlife (ISSN 0042 6792)  
June, 1979, Volume XL, No. 6

Dedicated to the Conservation of Virginia's  
Wildlife and Related Natural Resources

COMMONWEALTH OF VIRGINIA  
JOHN N. DALTON, GOVERNOR

Commission of Game and Inland Fisheries

## COMMISSIONERS

James R. Knight, Jr., D.D.S., Chairman, *Warsaw*;  
J. D. Bowie, Vice Chairman, *Bristol*; Frank F.  
Everest, Jr., *Alexandria*; Dolph Hays, *Arlington*;  
Allan A. Hoffman, M.D., *Danville*; Walter J.  
Leveridge, *Virginia Beach*; John P. Randolph,  
*Colonial Heights*; Richard E. Watkins,  
*Richmond*; Ralph L. Weaver, *Waynesboro*;  
William H. West, *Upperville*.

## ADMINISTRATIVE OFFICERS

James F. McInteer, Jr., *Executive Director*; Richard H.  
Cross, Jr., *Assistant Director*; Jack W. Raybourne,  
*Chief, Game Division*; Harry L. Gillam, *Chief,*  
*Education Division*; Jack M. Hoffman, *Chief, Fish*  
*Division*; John H. McLaughlin, *Chief, Law Enforcement*;  
James Engle, *Chief, Lands and Engineering*; Sam  
J. Putt, *Chief, Administrative Services*.

*Virginia Wildlife* is published monthly in Richmond, Va.  
by the Commission of Game and Inland Fisheries, 4010  
W. Broad St. All magazine subscriptions, changes of  
address and inquiries should be sent to PO Bx 11104,  
Richmond, Va. 23230. The editorial office gratefully  
receives for publication news items, articles, photo-  
graphs and sketches of good quality which deal with  
Virginia's soil, water, forests and wildlife. The Com-  
mission assumes no responsibility for unsolicited  
manuscripts and illustrative material. Credit is given on  
material published. Permission to reprint text material  
is granted provided credit is given the Virginia Com-  
mission of Game and Inland Fisheries and *Virginia*  
*Wildlife*, but clearance should also be obtained from  
contributing free-lance writers, artists and photo-  
graphers to reproduce their work.

SUBSCRIPTIONS: One year, \$3, three years \$7.50.  
Make check or money order payable to Treasurer of  
Virginia and send to Commission of Game and Inland  
Fisheries, P.O. Box 11104, Richmond, VA 23230.

Observations, conclusions and opinions expressed in  
*Virginia Wildlife* are those of the authors and do not  
necessarily reflect those of the members or staff of the  
Commission of Game and Inland Fisheries.

Special Second Class Postage paid in Richmond, Va.

## Features

- 4 IN PURSUIT OF NATIVE TROUT, by Bernard Bangley  
*The Trip Can Be Hazardous, But Well Worth It*
- 6 B.W., THE TEAL, by Carsten Ahrens  
*The Life of a Young Teal*
- 9 GAME WARDEN PHOTOGRAPHER  
*Henrico's Rick Perry Is a Promising Photographer*
- 12 VIRGINIA'S DIRTY AIR, by Barbara McEwan  
*The Fight to Cope with Pollution*
- 16 CAMPING ON YOUR OWN, by Beth Boone  
*Independence in the Wilds*
- 18 THE PHELPS WILDLIFE MANAGEMENT AREA  
*A Photo Essay by Paul Kugler*
- 20 RED ALERT, by Dorothy Beecher Artes  
*Preventing Fires on the Water*
- 24 ENDANGERED SPECIES UPDATE  
*A Look at the Current Status of These Species*
- 26 VIRGINIA WILDLIFE FEDERATION CAMP,  
by Joe Wiseman  
*An Investment in the Leaders of the Future*
- 33 IN NATURE'S GARDEN, by Elizabeth Murray  
*Campanulas*
- 35 BIRD OF THE MONTH, by John W. Taylor  
*The American Kestrel*

## Departments

- 3 Letters/Editorial
- 15 Personalities
- 22 It Appears to Me
- 23 Growing Up Outdoors
- 29 Outdoor Notebook
- 32 On the Waterfront

## Staff

HARRY L. GILLAM, *Editor*  
MEL WHITE, *Associate Editor*  
SANDRA COLEMAN, *Assistant Editor*  
ROBIN SHARPE, *Art Director*  
CARL "SPIKE" KNUTH, *Artist and Photographer*  
F. N. SATTERLEE and J. N. KERRICK, *Staff Writers*

COVER: Orchard Oriole, by Rockne Knuth,  
Fond du Lac, Wisconsin



# Editorial

## FISHING TOURNAMENTS

Chuck Hamm of Richmond, former state largemouth bass record holder recently furnished the Game Commission with a copy of a position paper on tournament fishing which he thinks reflects the misgivings of many of the state's non-tournament fishermen. He singles out Gaston Lake where the Third National B.A.S.S. Tournament was held this spring but says his arguments apply equally to most other Virginia lakes.

Tournament fishing has been a very successful venture and the revenue produced therefrom is the financial backbone of the National B.A.S.S. organization and its local chapters. It has been so successful that a host of mimic organizations are following the same success formula including some who specialize in fishing for striped bass and other species. The publicity surrounding big tournaments generates extra fishing pressure for months afterward. This includes individuals lured by the success stories of the tournament as well as state and local clubs wanting to fish the big tournament waters.

Hamm maintains that fishing pressure generated by the National Tournament and dozens of local tournaments is having an adverse effect on bass populations. In addition to his own observations, he cites the decline in citation bass from 69 per year in 1974 to 22 last year. Game Commission fisheries biologists noted a decline in the average size and catch per hour on Kerr Reservoir largemouth bass during and following the three National Tournaments held there. Excessive pressure was the obvious cause, but it would be difficult to prove that the National Tournaments and their attendant publicity generated this pressure.

Not so, says a B.A.S.S. spokesman. There is no proof that B.A.S.S. tournaments have any effect on the total bass fishing. As for the citations, the B.A.S.S. representative points out that these were declining before the big B.A.S.S. Tournament.

Another point of contention is the ability of fish released under B.A.S.S.'s "Don't Kill Your Catch" program to survive. Skeptics, including some Game Commission fisheries biologists, feel that a large portion of these released fish eventually die due to handling or failure to relocate. B.A.S.S. admits to losses of only 10-25% for cool weather tournaments and up to 60% for mid-summer events. These figures are improving since better aerators have been required. They further quote studies which show substantial records of re-catches, indicating that these fish live to be caught again.

One other argument proposed by Hamm is motive. He maintains that fishing for money is not what fishing is all about and that excess commercialization invites damage to the resource. He suggests that perhaps tournaments should be licensed, controlled or otherwise monitored more closely to assure that they do not abuse the bass fishery.

By legislative action the Game Commission was given authority beginning in July to regulate striped bass fishing tournaments, but the legislators chose not to include largemouth bass events.

Hamm concludes by asking what would Izaak Walton say if he could witness one of these modern angling tournaments? We wonder.—HLG

# Letters

## ARE YOU KIDDING?

My current subscription to *Virginia Wildlife* expires in June, 1980. I would like to extend my subscription for an additional 30 years to June, 2010. Enclosed please find my check in the amount of \$75.

Jim Beckner  
Martinsville

*This is certainly an ingenious way to beat inflation! Our congratulations.—Asst. Ed.*

## A DOG'S LIFE

"Canine Capers" in your February issue certainly brought back memories. We had a young beagle that when left alone would destroy or "unupholster" furniture. When scolded, he would get a most pitiful look and as much as say: "If you hadn't left me alone this wouldn't have happened."

Mrs. R. H. Francis  
Richmond

## PRAISE FOR VW

I have subscribed to your magazine for many years and always thoroughly enjoy it. I learn much from the articles and have used the full-page bird pictures for framing. Thank you very much for such a fine magazine.

Mrs. John H. Jones  
Midlothian

## EDITORIAL REPLY

I couldn't agree more with Bill Cochran's editorial in your December issue. On the land my family owned in Albemarle County, our biggest problem was deer poachers. The lack of respect these people show is a disgrace to the Commonwealth of Virginia. Our game warden worked day and night, but due to inadequate help was only able to do so much.

L. W. Umstadter  
Bartow, Florida

## CORRECTION

*In the April issue a photograph appeared on page 32 showing a trailer hitch that nearly conceals the license tag. This is in violation of the Code of Virginia, which in part states that no trailer hitch, coupling, insignia or emblem shall be mounted in such a way that any portion of a license is illegible. It is suggested that you inspect your rig to be sure you have a legal hitch for your trailer. Our apologies for the error.—Ed.*

## MAPS HELP

Thank you very much for starting to include maps with some of your articles. It really helps when you are able to locate where your interesting articles take place.

Ann Duncan  
Bedford





# IN PURSUIT OF NATIVE TROUT

IT CAN BE A TORTUROUS PROCESS, BUT  
THE REWARDS ARE WELL WORTH IT.

By Bernard Bangley



With only one hand free to grasp the tangled rhododendron, it was extremely difficult to descend the steep mountainside without an accident. Spongy earth collapsed beneath my heel. Ordinarily, my ultralight spinning rod would have been no burden at all, but it was definitely in the way here in the dark green light of what the pioneers described as a "laurel hell."

I was trying to sneak down to Laurel Run and its almost unknown population of native brook trout. Laurel Run is a tiny mountain stream that rises from a soggy spring in the heart of the Goshen Wildlife Management Area in northwestern Rockbridge County. I first came upon its source while hunting deer one frosty November morning. Over the years I have become intimate with this friendly trickle of crystal clean water.

Laurel Run exists for less than two miles. Until it is fed by its own tributaries about half way down, it remains small enough to be stepped across in most places. At its mouth, where it joins the Maury River in Goshen Pass, it is still shallow enough to wade in normal weather.

Now I really had to be careful. I was after wild fish. If they had the slightest indication that I was in the vicinity, I would not have had a chance. The vibration of my foot against the earth would have alerted them. The slightest visible movement would have sent them dashing for cover with an appetite that would remain suppressed until tomorrow.

That much I had learned from bitter experience. One wonders just how many aggressive, splashing fishermen have departed Laurel Run in disgust, convinced that no trout reside here.

But on this occasion any Indian would have been proud of me. I was wearing camouflage, and I was resolved not to stand or even sit within sight of water. I approached Laurel Run as prone as any snake. And I took my time about it, being satisfied with inches rather than feet.

I came out of the rhododendron and Laurel at the base of a three-tiered waterfall. It was easy to recall how it had looked one winter after the temperature had remained below freezing for more than a week. The whole scene before me then had been brittle and polished and still. Here and there, live water broke out of the ice for a short dash.

There was no ice now as I gently tossed a microscopic dry fly onto the surface of the pool at the foot of the falls. My favorite fishing along Laurel Run is in the spring and early autumn.

It is impossible to work with a conventional fly rod. The "large" pool before me was only eight feet wide, and vegetation extended beyond the water's edge on both sides. Obviously, to wade into the water would have made fishing pointless. A short, light spinning rod is ideal. No casting is involved. I simply let out a length of line and give the rod an easy, horizontal twitch.

The fly that has become my favorite is a tiny white moth on a number 14 hook, and I was using one that day.

The strike was instantaneous. And hard! I could actually feel the blow. It was quicker, more muscular, than the strike of any other fish I have ever gone after. I

have caught some brag-sized game fish in eastern Virginia waters, but none of them hit like these little trout. The difference is difficult to describe, and unless you have experienced it you will never fully comprehend it. It is the difference between snagging a log, and an electric shock.

A flash of silver allowed the eye to confirm what the hand had felt. And then the fight was on. I could easily have yanked it out of the water. Zing! So much for that. But what a thrill to let him run, and to give him a sporting chance to get free of the hook; to feel the rapid vibrations of quivering muscle and watch the fantastic speed as the frail line cut through the water. There were no acrobatics, but the heavy rushes this way and that were just as impressive.

Tired and spent, the fish yielded and I held it in my hand. My first impression upon landing a brook trout is always its coldness. Laurel Run is a natural refrigerator, and the brookie can have it no other way. Were it not for the cold springs, the evaporation as the Run pounds and sprays its way downhill, the continuous shade and its altitude — all of which conspire to keep the temperature down — the native trout would not survive. Its upper limit has been set at 75 degrees, but 65 is more realistic. Laurel Run is usually in the fifties during the hottest part of the summer. A trout taken from it is icy in the hand.

Everything is stacked in favor of this outstanding fish except size. In Virginia, the brook trout does not grow as large as in Canada. In fact, it gets progressively smaller the farther south you travel in its range which extends to the mountainous areas of Georgia. The first brook trout I saw was no bigger than the minnows I had used for bait in the lakes around my hometown, Suffolk. An eight-inch brook trout is a trophy. This fact alone probably accounts for the fact that there is so little fishing pressure on Laurel Run and the other native trout streams in our state.

With five lively fish on my stringer, the action suddenly stopped. The brookies had gotten wise to me. The little white fly still floated enticingly on the water, but there were no takers. At this point I could have switched to worms and proceeded to catch my limit. But there would be another day, and greediness never works in the brook trout fisherman's favor. I took my catch and headed for home, making up in carelessness upon leaving for my extreme caution in approaching.

The small fish are easily cleaned. My wife long ago learned not to express surprise at their diminutive size. These "sardines" make for fine eating.

Before I had ever caught a native trout, I had been told to expect a salmon pink flesh. This had been true in some areas. Laurel Run, however, has a high iron content. Forge Mountain is nearby and iron diggings abound. The result is that natives taken from this stream have a flesh that is yellowish grey. The flavor is indescribable.

Laurel Run is fortunate in that it is entirely within the boundaries of the Goshen Wildlife Management Area. As a result, this exquisite fish still lives and breeds in Laurel Run and Bratton's Run and other areas of this mountain wilderness. And you can be sure there is a handful of dedicated fishermen who are grateful.

# B-W the Teal

## For a young teal, life is a learning experience.

by Carsten Ahrens

B-W was a blue-winged teal. He belonged to that big subfamily of the surface feeding wild ducks that include the black ducks, gadwalls, mallards, pintails, wood ducks, the cinnamon and green-winged teal, and even some Eurasian species.

B-W had been hatched the year before in what was his mother's second attempt at raising a family. The first site she selected was on a flood-plain strewn with the debris of many high waters. Wild blue flags and marsh grasses had established themselves, almost hiding the nest.

It was her first attempt at home-making. She made a depression in the sand about ten inches across and six inches deep which she lined with dead grasses and reeds. Interwoven with these were feathers pulled from her breast, fluffy dull white and brown down that became the warm part of the other nesting stuff around her. The nest was cosy and a remarkable stratagem of concealment. When she left it, she arranged with her bill the ruff-like rim in such a way that the 14 eggs were completely hidden.

But two boys, weary of spearing carp, started a fire to roast weiners for lunch. A brisk wind sent the flames of their bonfire out of control in the dry refuse of former floods. Wild fire went roaring inland, destroying the first nest of the blue-winged teal along with nestlings of countless shorebirds and the helpless young of cottontail rabbits. The duck did not leave her nest until it began to smoke.

It would seem in selecting a second site, the pair of teal went to the opposite extreme. This time the nest was constructed on a rock in an abandoned limestone quarry. The spot was completely surrounded by tall reeds that grew in knee-deep water. The rock was draped with the remains of many years of reeds that had withered and had fallen across it. Here B-W's mother managed a satisfactory nest. Although it contained fewer feathers and just eight eggs, the tan shells

appeared to be quite smooth and shiny.

The eggs were laid a day apart, always in the morning. There was no incubation until the last one was in place. During these days, the duck spent considerable time exploring the collection of quarries with her mate, but each period away found the eggs carefully covered. It was interesting to watch her leave and return to the nest. She took the most roundabout way, sneaking through the waterweeds and shrubs, never returning twice the same way.

Then followed three weeks of intensive incubation when the duck left the nest briefly for exercise or food once or twice a day. But when the time approached for the hatching of the eggs — the last 48 hours — she didn't leave at all. Left alone, her mate soon joined a small flock of other drakes who left the raising of the young to their spouses. Had he been a wood duck, he would have been a more attentive mate and father.

By this time July was well under way. The ducklings hatched on the same day. Each pipped a circular opening from one end of the egg and struggled to free himself. Each a little bird emerged wet, appearing quite bedraggled, and quite exhausted by the ordeal. But each soon dried, discovered a zest for living, and became a bright-eyed bundle of fluffiness.

B-W was the first to hatch, first to dry, and he was a bit impatient with his mother for not getting the show on the road at once. But one egg hadn't hatched and she was loath to leave it behind. Unlike robins, blue jays, or herons, ducklings are precocial; that is, active and fully-clothed almost immediately after hatching. The old duck never brings food to the nest for the young, but takes the young to the spot where food is.

Mid-summer had come and the water was only a few inches deep about the rock. B-W was the first to jump feet first from the rock and soon the seven were bobbing in amazement and ecstasy about their mother. Had her first brood been successful on the flood plain,





*Illustration by Spike Knuth*

the young would have been a long time reaching the water for an accumulation of logs and other debris would have barred the way. Here in the quarry, they simply fell off the rock and found themselves swimming. Young seals, have to be taught to swim; with ducks, no lessons in swimming are needed.

The old duck had a gentle quack that urged the seven to stay close to her as she led them around the margins of the dozen adjoining quarries. A few of the man-made holes retained no water. Some lay like rim-less glaring mirrors, but most were edged densely with willow, dwarf juniper, buttonbush, and many kinds of water weeds. The old duck tried to keep the seven in the margins much to the annoyance of B-W who was something of a showoff and seemed always headed for the center of the pools. There he really would have been a "sitting duck" for the hawks of the region. Once the duck spanked him with her bill after rescuing him from the mossy back of a big snapping turtle.

At first they waited for their mother to catch something, maybe a crayfish — newly moulted, soft, and tasty. She would tear it to bits and each duckling would get a share. But after the first week, each was finding some tempting morsel, flaunting it before the others, and then trying to keep it for himself. It became a game, providing much exercise.

There were several small "islands" in the quarries, quite overgrown with junipers, where the old duck took them during hot, sunny spells and at night. One proved a haven during storms for there were several sheltering, shallow caves in which they escaped from wind and rain.

And they learned about their enemies. Once when they were some distance from water in a dry quarry, they barged into a feral house cat. The old duck instantly appeared to be fatally wounded, and with plaintive cries, flounced about. She instantly got the cat's attention and succeeded in leading the predator away from the little ones. The ducklings seemed to

evaporate with her first warning quack. They hid themselves in the surrounding rubble by "freezing" and becoming just other inanimate objects among the quarry stones. Later, after tricking the cat and leading it to the quarry's edge, she flew in a wide semi-circle and returned to her family that hurried to her side after she gave a few encouraging soft quacks.

The ducklings learned about other animals: the great-horned owl that moved on soundless wings; the greedy crows were real pests, yet were sometimes a blessing because their noise was often a warning of a worse predator. . . maybe a striped skunk, a red or gray fox, mink or weasel. . . was in the vicinity. They also battled smaller foes. . . lice, internal worms, and an insidious leech that tried to invade the nasal passages of the young birds.

About six weeks must pass from the time of hatching before a young teal is able to make its first flight. B-W and his siblings had hatched later than the other ducklings in the quarries, and they seemed to realize that fact. They spent more time in active play, chasing each other, racing, dashing after food, and exercising the muscles of their developing wings. B-W, encouraged by the old duck, kept himself and the others on the go. He was the first of the seven to fly, and in a week all the rest were aloft and following their mother, initially in a line, and then in a loose flock. At first the old duck led them but soon B-W took over on their merry rounds of the quarries while their mother watched their gyrations from an island.

By the time September was underway, each duckling was as large as the old duck, the drakes slightly larger than their sisters. All were fine looking. . . just a glance at their images in the huge mirrors on which they floated convinced them of that.

B-W was especially handsome. His neck and head were purple-black and were set off by a large white crescent on each side of his head. The feathers that covered the rest of his body were buffish and dotted



with chestnut brown except for the pure white rump patches. The wings held considerable blue which almost disappeared from sight when he rested on the water but was very noticeable in flight, when he stretched, or when he oiled his feathers. He enjoyed his looks and preened himself whenever he was at rest on water or shore. Each wing also had a luminous, rectangular patch that is found in all members of this subfamily. In the males of gadwalls, it is white; in pintails, brown and white; mallards, blue; in blue-winged teal, green. B-W's mother and sisters, as is true of most ducks, were less colorful. The blue of the wings was less intense and there were no white crescents on their heads.

Blue-winged teal breed across the continent from southern Canada through the northern tier of states. They winter from the southern tier of states, on down through Mexico and Central America, and across the north of South America. Because their summer and winter ranges are so extensive, the ducks utilize all four flyways in their migratory flights: Atlantic, Mississippi, Central, and Pacific.

One late afternoon, B-W's family and the teal of four other families had been feeding together when, led by an old bird, they had a conference. Teal are quiet birds. They do not quack noisily as do black duck and mallards, or whistle like pintails and wood ducks. Shortly after, the little flock left the lake behind and began what was for most of them, their first migratory flight. They took the Atlantic flyway down the coast where they lingered for several weeks in the backwaters of the Outer Banks, then on down through the Bahamas, the West Indies and on to the Guianas of South America. There was no attempt of making a marathon of the trip. They moved along at about 50 miles an hour and avoided obstacles by flying between

500 and 1000 feet above the ground. Whenever possible, they utilized the early mornings and late afternoons for flying with midday and night periods for feeding and resting. It was late November before they reached the swamps of the Guianas.

While his family seemed content with settling down for a winter vacation in Surinam, B-W flew on, exploring the seemingly endless lowlands and highlands of the crown of South America. By January he had joined a dozen blue-winged teal in Eastern Columbia. There were six ducks and as many drakes. Two were veterans of former migratory flights and led the return trip north.

Again the trip was an unhurried one for it would have been foolhardy to advance northward faster than spring. Sun and warmth are necessary to insure the availability of duck food. So while killdeer and woodcock streaked on ahead, they loitered by bays and bayous, swales and swamps, streams and shores.

B-W found the northward trip completely intriguing. In the flock was a pretty little duck to whom he gave all his attention. He found she quacked quietly and discovered he couldn't quack at all. He made beeping or peeping sounds instead, which didn't displease her. On the long way north up the Mississippi flyway they were hardly aware of the other members of the flock, except in flight. Down on earth there was only one another. They helped each other find food and went through an ancient and elaborate ceremony of bowing and dipping, swimming in circles, shyly touching with bill and wing tips. By the time summer had really come, the flock had reached the land of quarries. The two young teal were quite willing to leave the flock, and the pair circled down to begin a new cycle of life in B-W's old haunts.



# Game Warden Photographer

Henrico County's Rick Perry  
does more than just  
admire the outdoors!



*Photo by Francis N. Satterlee*



**W**hen you combine a love of the outdoors with a flair for photography, you can obtain some surprising results.

Rick Perry, a Game Warden with the Virginia Game Commission, says that he's always loved both — and the photos on these pages amply illustrate just where both these loves lead him.

Rick, a relative newcomer to the Game Commission, has only been taking photography seriously for about 2½ years. His affinity for the outdoors has been with him longer.

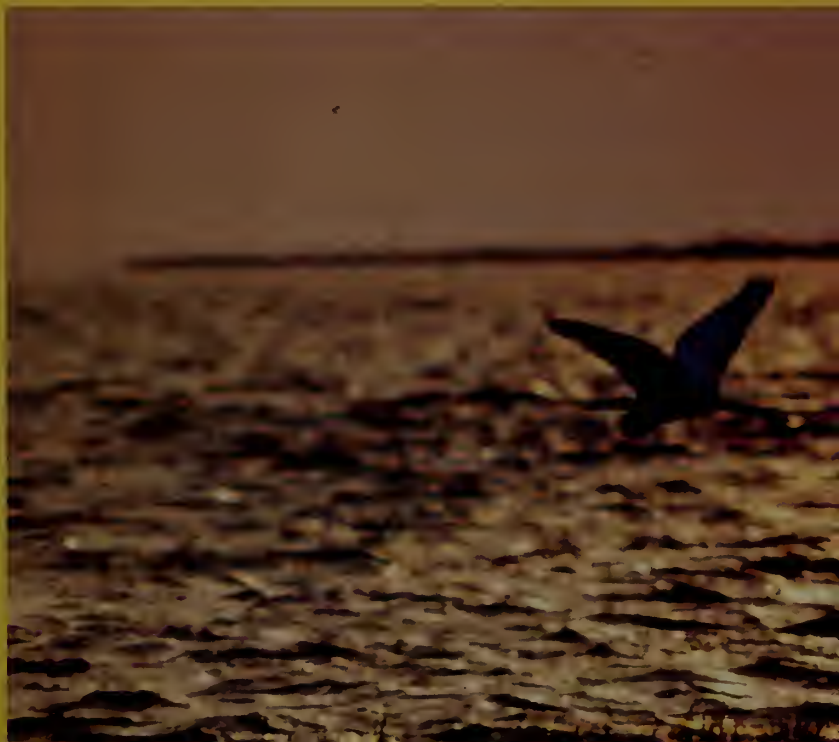
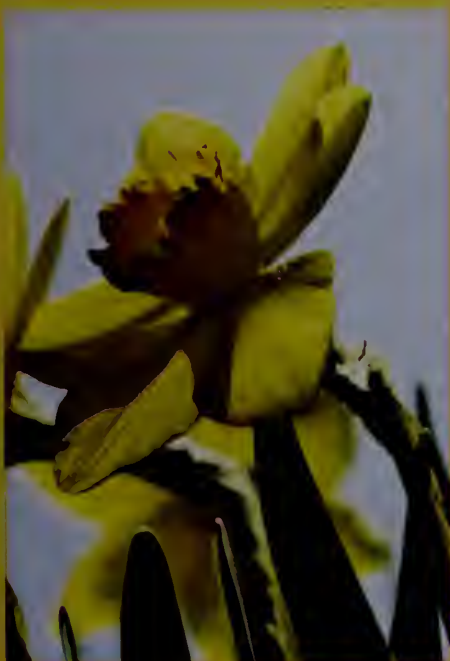
A native of Franklin and now a Warden for Henrico County, Rick indicates that he finds his work challenging and rewarding — a perfect job for someone who is happiest in the outdoors. Carrying along a camera has become a habit. And this perseverance has its rewards, as these photos show.—S.C.







**Perry combines photography  
with his profession.**



# Virginia's Dirty Air

By Barbara McEwan



*Forested areas do detoxify the air, but not sufficiently to reverse the effects of pollution. The damaged Virginia pine (Left) is typical of trees that suffer from air pollution. As illustrated, the visible haze means that the air is heavy with ozone, a potentially dangerous pollutant. (Below)*





# Besides our own pollution, Virginia must cope with that of our neighboring states.

Virginians for the most part feel safe about the quality of the air they breathe. After all, we have comparatively little industry that pollutes. Right? Well, right as far as it goes, although as the population grows, we are likely to have more of it. We do have our share of automobiles which pollute, but a problem like Chicago, Cleveland or L.A. have?

The U.S. is a nation which is both heavily industrialized and heavily traveled. To make it worse for us in Virginia, the bulk of this occurs to the west, north and east of our state and generally well within a 1000 mile radius. All those pollutants spewed out over heavily populated industrialized areas don't just stay put to plague the originators alone. They also move on the air currents and end up far away. While progress has been made in reducing the levels of other pollutants for which standards have been set, this is not true of ozone. Instead of declining as a problem, trend lines for ozone continue upward.

Unfortunately, ozone causes more plant damage than any other pollutant. In a heavily forested state such as ours and one which also relies economically on its agricultural products, monitoring ozone is vital. This is being done by the State Air Pollution Control Board and also Virginia Tech. As of 1977 the former had 172 active air quality monitoring sites which record a variety of pollutants, including ozone.

How much ozone is too much? The EPA has set a top limit of 0.08 ppm (parts per million) as being acceptable. While the standard will likely be relaxed to 0.10 ppm, in Virginia during the summer months even this is exceeded repeatedly. If you think the tops of the Blue Ridge or rural areas will provide relief, forget it. This is precisely where many of the readings above EPA standards were made. The highest reading of all was

made in Richmond in 1977: 0.0250 ppm. Furthermore, at the Richmond station in 1977 the 0.08 ppm standard was exceeded 602 times whereas the current law provides for exceeding the standard only once a year.

How do you know when the air is heavy with pollutants? A deep haze may develop, although as ozone is colorless, the air may also be clear. Virginians are used to haziness, however, at least with their Blue Ridge Mountains. Most people, though, don't know the reason for the bluish cast: the release of hydrocarbons from the transpiration of countless millions of trees. In years gone by these hydrocarbons ended their career, to speak, as harmless additions to the atmosphere. No longer.

Today we are faced with vastly increased quantities of hydrocarbons as a result of large scale burning of fossil fuels and evaporation of petroleum products and organic solvents. When the cycle involving oxygen, ozone, nitrogen oxide and nitrogen dioxide becomes unbalanced in the presence of large quantities of hydrocarbons and oxides of nitrogen, high temperatures and high light intensities, ozone excesses develop. This photochemical reaction takes several hours to become significant.

Thermal inversions exacerbate the situation. The Virginia-West Virginia border has the second highest levels of inversions in the nation, the L.A. basin being first. Our Blue Ridge Mountains act as a trough in which air masses get trapped. The situation in Roanoke is compounded because of the thermal inversions created in larger cities in general.

A thermal (temperature) inversion consists of a layer of warm air which acts as a lid over cooler air nearer the ground. The warm air rises until it reaches the density

of the cooler air above, whereupon it becomes stable in the absence of wind. With normal air circulation, of course, warm air would progressively cool with height. But as wind speeds in southwestern Virginia are often very slow, stagnant air masses and, therefore, inversions are common — and may last for days.

## The tobacco industry suffers heavily from pollution.

Just as the damage done to animal life by pesticides was slow to be accepted, so are people reluctant to face up to the injuries done to both plant and animal life by their industries and especially their automobiles and trucks. While the latter contribute nearly 60% of the total pollution, with coal and oil fired utility plants and industrial wastes accounting for almost all of the remainder, the three sources are about equally responsible for damage to plants. In general, most damaging to plants are gaseous and aerosol pollutants. Particulates seldom cause damage unless the solids combine with surface water to form strong acids or bases which then create necrotic (dead) spots.

Industrial damage to plants is not too difficult to determine if the source is easily pinpointed. Smelting plants in such places as Ducktown, Tennessee and Palmerton, Pennsylvania have been responsible for considerable losses in a rather clearly defined area. The devastation in the L.A. Basin in which millions of trees have been damaged or killed is due not to industry but auto exhaust.

Forest covered areas have been shown to detoxify the air, but any natural system of purification can handle only so many pollutants. Thus while Virginia is well forested, at our peril do we complacently sit back and expect our trees to protect us. As mentioned earlier, Virginians in the western part of the state are largely the victims of polluters elsewhere. While those living in the eastern urban areas create significant quantities of their own, they too have a vested interest in what Americans to the north, east and west of us do.

Determining exactly what pollution does to a plant is a time consuming business, and there are a great many plants important to man. Ozone wasn't discovered as a pollutant until 1958. The crop affected was grapes located in the L.A. basin. In 1959 damage was found on eastern tobacco. By 1973 a study found that 30% of the white pines in an area of Rockingham county, Virginia showed visible injury and 5% were severely affected or completely brown.

How do you know if plant damage is due to pollution? Controlled laboratory experiments have determined the type of symptoms found on different

species. However, in the field other non-living as well as living agents can produce similar symptoms at times. Therefore, it is important to check a plant's cultural history for a period of years and also look for other species which should be affected by a given pollutant. Furthermore, injuries will be over a fairly wide spread area.

Long term exposure to low levels of a pollutant can cause chronic symptoms expressed as chlorosis (yellowing of leaves), strippling (a color change without necrosis), dwarfing or a more subtle growth loss. Acute symptoms resulting from either short or long term exposure to high levels of a pollutant range from well defined areas of dead tissue (e.g. tip burn on pines) to death of an entire leaf or even death of an entire plant.

As plants in the field are usually subject to more than one pollutant, EPA standards for individual pollutants — while helpful — are hardly definitive. Synergistic effects of pollutant interaction was first demonstrated in the laboratory in 1966. Acting together, pollutants may cause more damage than when acting alone, even at high concentrations.

Furthermore, one pollutant may predispose a plant to be susceptible to another pollutant. Pollutants may also predispose a plant to other abiotic as well as biotic afflictions. As long as food, along with water, is the basic prerequisite of life itself and with an ever expanding population to accommodate, it behooves us to rigorously control all factors which adversely affect our food supply.

Tobacco, a major Virginia crop, is considered an indicator plant for ozone, a signal that air quality is not good. In 1976 the tobacco industry took a \$9 million loss as a result of pollution. Peanuts and wheat are also considered very sensitive to ozone. In other words, they will usually develop symptoms after short term exposure to fairly low levels of pollutants.

The pines, locust, walnut, tulip poplar, maple, some oaks, apple and peach trees are all considered very sensitive to one or more of the common pollutants, usually including ozone. Virtually all the vegetables in the home garden are very sensitive to at least one pollutant, usually including ozone, as are such staples as strawberries and grapes (another indicator plant).

Susceptibility — or lack of it — may be genetically determined within the species, as well as between species. Therefore, cuttings and seeds should not be taken from plants showing signs of pollution. In extreme cases, a grower may find a certain crop is best avoided in a given area.

While panic over ozone as it affects plants is not in order, by the same token neither is complacency. It is certainly safe to say few if any pollutants added to the atmosphere or soil by man's activities help either plant or animal growth and well being. Therefore, as industries and automotive vehicles increase in numbers due to population increases, we cannot afford to stand still in terms of pollution control. Enough is already known of the effects of pollution on life to make it obvious that in the years ahead ways must be found to reduce ozone levels as has been done for other major pollutants.



# Personalities

BY FRANCIS N. SATTERLEE



## Rex Hill

Rex Hill is a Carroll County boy. He was born in Hillsville where his father was a building contractor, and although neither of his parents were hunters or pursued the piscatorial art, young Hill was intensely interested in the outdoors and nature from a very early age. This later developed into an avid interest in both hunting and fishing.

During the summers, after school days and on weekends, Rex spent his time learning the construction business from both his father and grandfather. This included training in carpentry and electrical work, as well as many other aspects of the trade.

During December of 1969, just six months after his graduation from Hillsville High School, Rex enlisted in the United States Army. He was selected to undergo highly specialized training in physical endurance and tracking. The training was accomplished in a National Forest in Georgia. Upon completion he was assigned to a Tracking Unit consisting of five men and a scientifically trained dog. The unit spent 18 months in Vietnam where their expertise was utilized in tracking down enemy troops following ambushes, clandestine infiltration or acts of sabotage. Often times the unit

would be air-landed in hostile territory and would operate on their own for extended periods of time.

Rex returned to the United States and was discharged in February of 1972. He resumed work with his father until entering Wytheville Community College, where he majored in Education. Rex then attended VPI & SU pursuing a course of study that resulted in a B.S. degree in Agriculture Education. He taught Agriculture Mechanics in the Carroll County Intermediate School for one year and then spent a year teaching Agriculture Production and Horticulture in Carroll County High School.

During this period he learned that the Virginia Game Commission was seeking Game Wardens. He applied and was accepted in April of 1978. Following completion of his training he was assigned to duty in Chesterfield County.

Rex enjoys working with sportsmen and especially with young people, helping them to understand the wildlife resource and the outdoors. He is married to the former Linda Huff from Hillsville. The couple has one son, Howard Todd Hill, and they make their home in South Richmond.

# CAMPING ON YOUR OWN

THE EXPERIENCE FOR A WOMAN CAN BE A REWARDING ONE.

BY BETH BOONE

Why is it that although sixty million Americans folded their tents and headed for the outdoors last year, few of them were single, divorced or widowed women, with or without their children? Surely we're in need of the same inexpensive vacations, the same spiritual rejuvenation and the same ego boost that striking into the "wilds" and succeeding bring. Every time I camp, I wonder at the fact that my son and I are a campground novelty, as much a curiosity as the campground animals. It must be that camping still carries a "male necessary for success" image or perhaps, "roughing it" is still equated with "toughing it." Not so, my friends! What I would like to do is dispell those myths, tempt you with my personal experiences and suggest ways to give Virginia's outdoors a chance.

Lest you think I grew up in a tree limb or was raised by a boy scout master, let me set the record straight. I was an indoor, bookish, teaparty-type, chubby child. My mother never spent the night in a tent and probably never will. At the age of ten, I went to girl scout camp and hated it so much that I was sent home after four days. As a married adult, I scorned the very idea and so I never camped until five years ago. When I tried it, I liked it; I loved it! I became an addict!

Were I a mouse in your house or an eavesdropper at your keyhole, I'd likely hear, "Big deal." "I can't do it by myself." "What? Carry all that junk somewhere?" or "My idea of camping is a good Holiday Inn with a sauna and a color T.V." or "Why should I leave the comforts of an airconditioned home and an automated kitchen for that?" I said all of those things. And, my somewhat egomaniacal response would be, "Try it!" If you've tried camping and still aren't turned on, try again; only this time, try it my way. Like my French-Canadian friend (that I met while — you guessed it — camping) who took his "How to Kayak" book with him in the kayak as he practiced a difficult maneuver, take this article with you as you plan, prepare and camp. It may not really help but you'll feel somewhat guided and slightly less alone.

"Where should I go and how long should I stay?" you ask. My first expedition was planned for three days and lasted for twenty-three. My destination was Assateague Island, yet I managed to also visit much of New England and venture into Canada for the very first time. That, of course, was vacation time and coincidentally a childless trip. Jobs, children, dogs and

unattended houses will all impose their own restrictions, but the moral to my story is still, let your trip be as flexible as possible. Don't make plans or rules so stringent that you feel like a failure when you can't follow them. With small children, it might be best to camp, at first, near home. Virginia has many beautiful state parks. In fact, the biggest advantage to living in Virginia is that you're never more than a few hours drive from any scene that suits your fancy. And yes, there really are places where you can camp free, without neighbors, near clear bubbling spring water, with a waterfall rumbling in the distance, a swimming hole at the base of the falls, blackberries wild, in season, butterflies that sparkle as jewels in the sunlight and cool, green mountains circling the sky. To the east, is the Atlantic, the sand and sun and the chance to catch fresh flounder for breakfast and find seashells to use for dishes and ashtrays and candle holders, because you always forget something.

Wherever you begin your camping experience, be comforted with the fact that unlike our south-western desert dwelling sisters, we always have a store and a doctor and even a motel (for quitters) nearby.

The midwest hasn't the only franchise for friendliness and helpfulness. The folks that I've met while camping in Virginia have literally bent over backwards to help out, if help was what I needed. They've lent if I needed to borrow, talked when I lacked for conversation and recognized my need for solitude. My son has scores of adopted for the day or weekend or week, aunts, uncles, grandmas, cousins and friends. He's learned, most naturally, the joy of giving for the moment, of meeting and sharing even without a tomorrow in which to get back.

My advice is that you go where you want to go, stay as long as you are able and happy and come home when you're not. Personally, I've avoided commercial, chain-type campgrounds like the plague, but if laundromats and swimming pools and the nearness of recreational vehicles will ease your soul, then head for the nearest. Doing whatever turns you on is what will make you a camper.

What should you take? At the risk of seeming overly simplistic, I reply that you should take whatever keeps you happy, dry, fed and comfortable. Baby yourself. Certain basics are essential and I'll discuss those momentarily, but the extras are free choice items. If a



drink before dinner makes you feel luxurious, then take along a bottle of your favorite. If the thought of spending days without make-up devastates your entire being, then pack up a good mirror and all of the lotions, potions, creams and colors that you normally need. Don't go with the notion that you're going to imitate Thoreau, abstain from worldly delights and come back a non-smoking, non-drinking, non-snacking health food fanatic who knows how to commune with nature. The change from bed to sleeping bag and kitchen to kerosene stove will be enough.

If this venture will be your first, borrow or rent equipment and spend as little as possible. Most camping supply stores also rent tents, bags and other basics for a reasonably modest fee. Unless it's very cold, sleeping bags are convenient but unnecessary. The covers that cover you at home will roll up, travel and cover you as well in a tent. On the other hand, a tent is a basic necessity. Rain in the face is a genuine drag, so is a dew-soaked blanket. However you procure it, let it be the light-weight, made of rip stop nylon, very easy to put up type, i.e. as few poles and pieces as possible. If money allows, buy two, one for you and one for the children. I love my tent. I never set it up without feeling as though I've just blazed through new territory and built myself a house. And, the whole process takes ten minutes. Each time that I lay out sleeping bags and arrange my living quarters, I feel like I've just redecorated. Maybe it's the only way for grown-ups to still

*A camping trip with the woman herself in charge can be a rewarding and unique experience not to be found elsewhere.*



“play house” without all of the adult housekeeping, bill-paying, responsibilities.

I began with a borrowed tent, several blankets, too much food and a Coleman stove. Through the years, I've acquired a good sleeping bag (during an April snow storm in Arizona), a kerosene lantern (purchased in a Berkely thrift shop, it's invaluable for doing things in the dark) and a shovel (great for digging holes.) I've also come up with a good size list of items that I try not to be without on any trip.

1. Big plastic garbage bags — most of the sixty million don't know it, but leaving litter behind is uncool — large bags can also become emergency rain gear.

2. Rope — good for clothesline, walking dogs and tying anything down.

3. A whisk broom — helpful in keeping tents neat and cornchips off of car floor.

4. A good flashlight — comforting in the dark.

5. Foam rubber padding for sleeping on — rocks are hard and suffering is not a requisite for good camping.

6. Game — any kind preferred — kids and adults need rainy day diversions.

7. A hammer — sometimes needed for staking out your portable home.

8. A commercially available sponge on a soap-filled tube — saves transporting bottles of detergent.

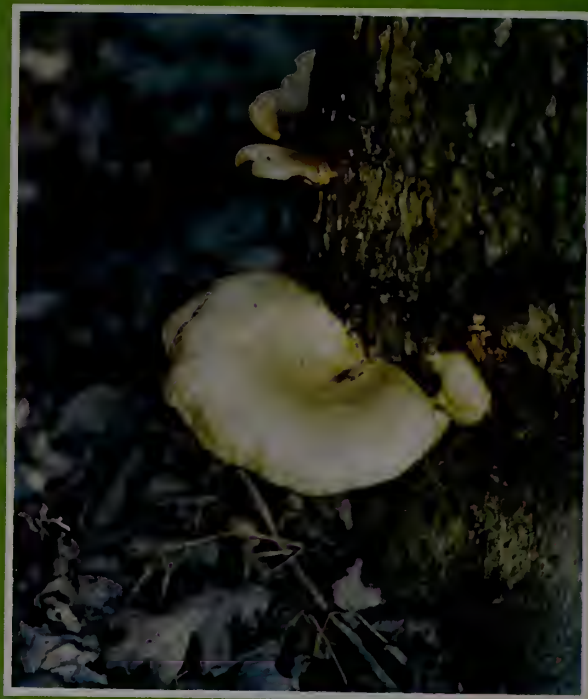
9. A plastic dishpan — for storing dishes and washing them.

One last thing about equipment: commercially sold camp pots, forks and dishes are an unneeded luxury that benefit their manufacturers more than the camper. What is convenient though, is a place where you keep all of your camping stuff — which you find by rummaging through kitchen drawers, cupboards and closets — in one place. A shopping bag works well. That way, whenever the time and the weather are right, you literally grab up your bags and go.

A few final words that may encourage you. In five years that contain nearly a year's worth of tent time, I have never seen a snake. Black flies, mosquitoes and New England “no-see-ums” respond best to an insect repellent with a high N.N. Diethyl Meta-Toluamide content. The ponies at Assateague Island love apples and salads; and raccoons and squirrels everywhere love nuts. Campground animals are a demanding lot; be prepared to feed and occasionally be stolen from.

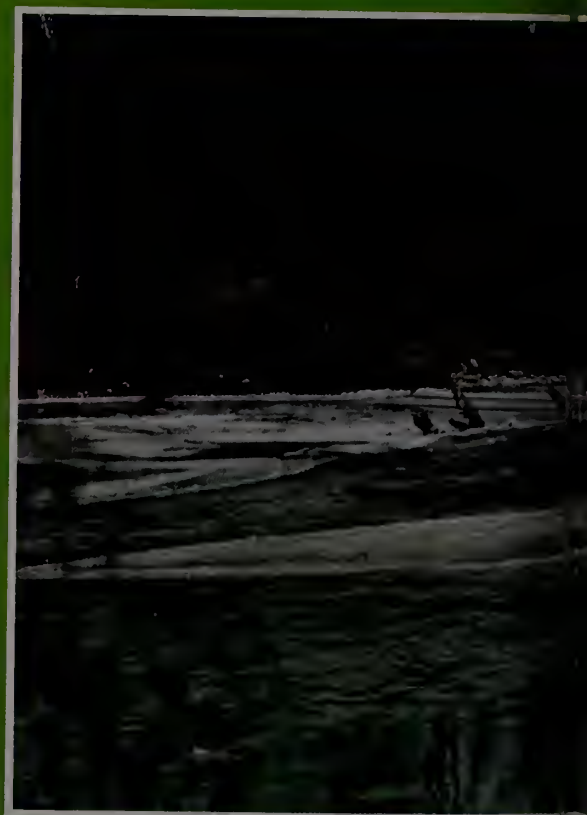
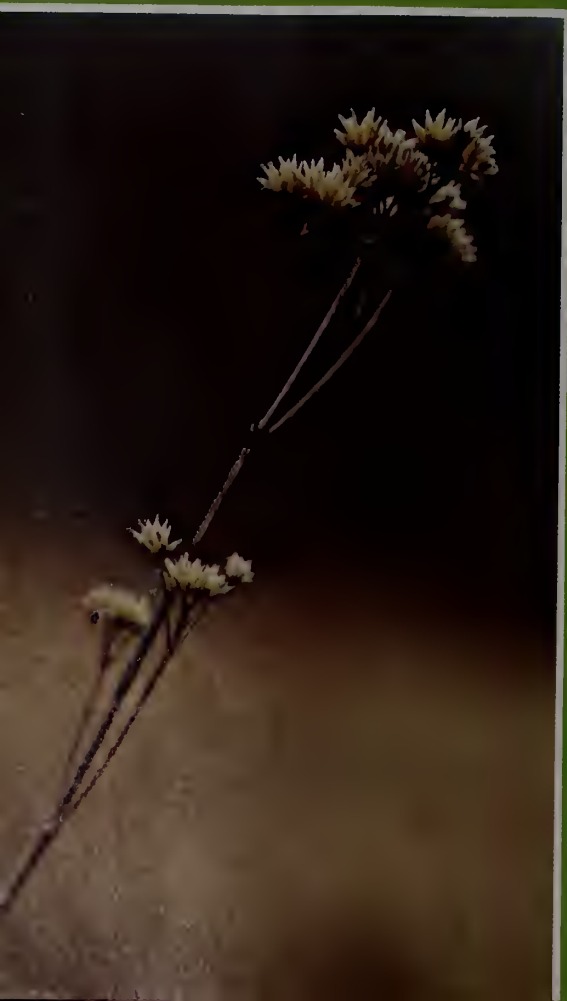
As in anything, practice makes perfect. The more often you set out, the more enjoyable the experience becomes. Take along a friend, at times, and don't hesitate to treat your child's best friend to a weekend now and then. One of my biggest thrills occurred when I witnessed my son's friend, Mark, as he saw the mountains for the very first time.

Camping has taught me the joy of a more primitive existence. I've learned which native “weeds” are really good salad greens and which to avoid. I can feel the difference between five and ten mile per hour winds. Even the rain and thunder and lightning have a beauty that I never can fathom indoors and when the sun reappears — words are too cheap to describe the lift in my spirit. Who knows what camping may teach you?



# Phelps Wildlife Management Area

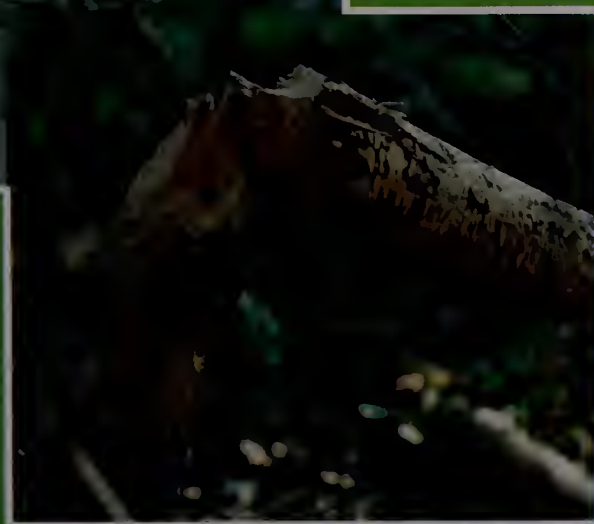
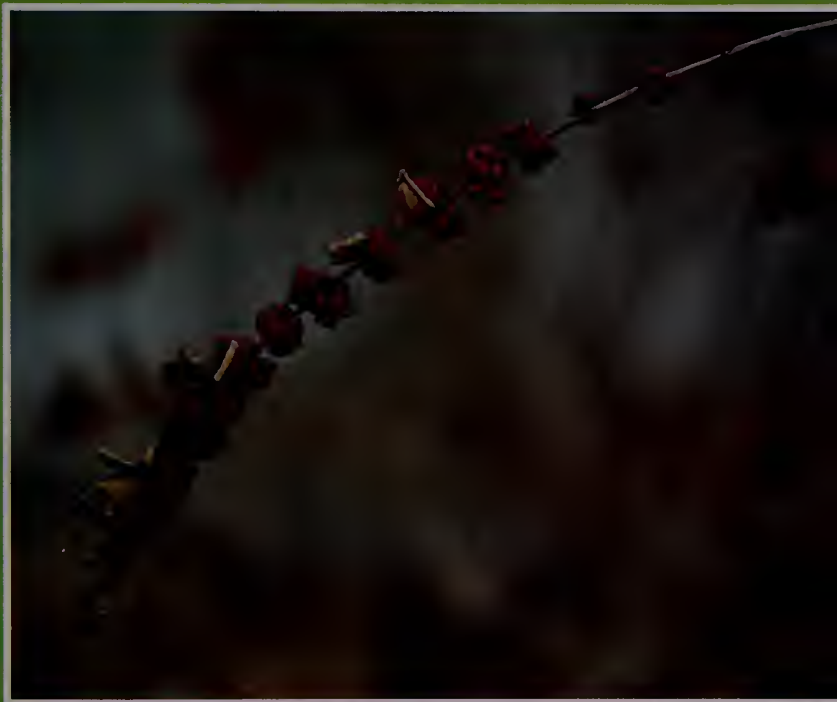
A PHOTO ESSAY BY PAUL KUGLER

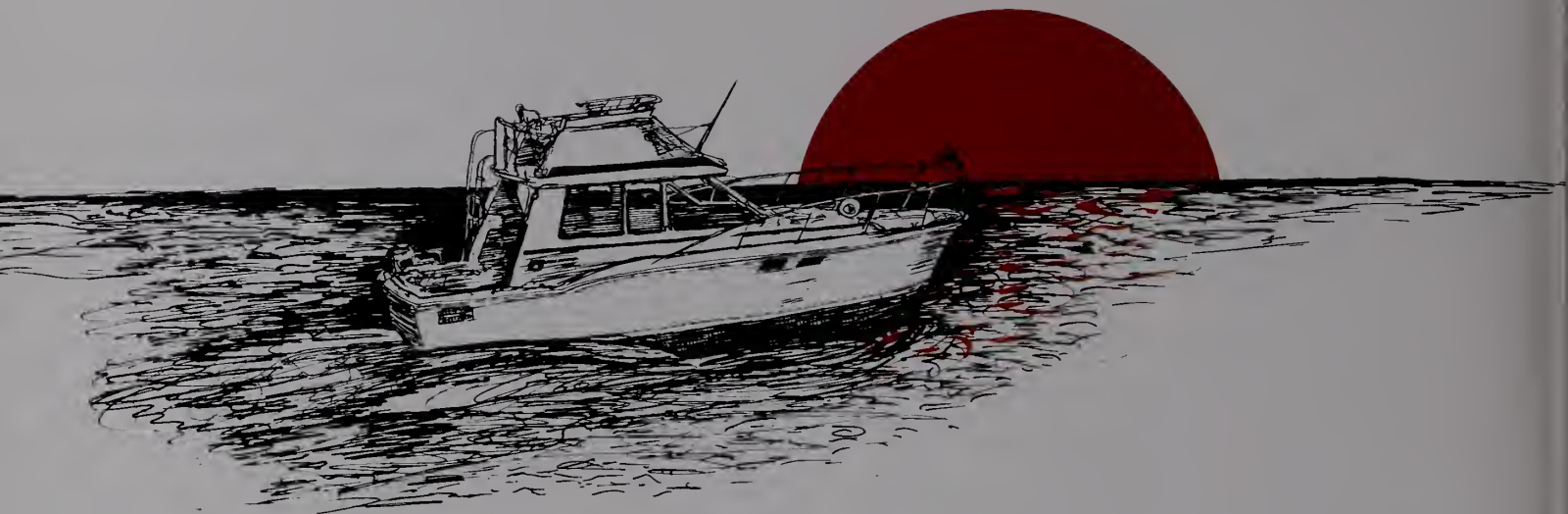


**n**atural beauty abounds on the Chester F. Phelps Wildlife Management Area. Formerly the Rappahannock Wildlife Management Area, it was re-named in 1977 to honor Phelps, recently retired Executive Director of the Game Commission.

A turtle relaxes in the sun. Trees grow and decay. Coralberries offer color against an otherwise drab background. Through it all, the Rappahannock flows quietly by.—S.C.







# RED ALERT

BY DOROTHY BEECHER ARTES

**F**ire. The very word evokes an immediate and frightened response in the hearts and minds of even the most stoic of us. On a boat, the consequences can be even more catastrophic than on land. Thus, sensible precautions are a necessity for boaters as well as homeowners.

A clean boat is usually a safe boat. Cleanliness, vital to above-deck and living spaces, is far more vital to engine and fuel compartments and all bilge areas. These hidden spaces must be frequently flushed and cleaned to prevent any build-up of flammable vapors. Good ventilation is necessary for all enclosed spaces.

As to engines, the operator should follow closely the manufacturer's instructions for all mechanical equipment. The engine compartment should be opened, inspected and ventilated. The fuel system within the compartment should be inspected and each fitting examined for tightness. This tightness examination is especially important when an engine has operated for a considerable time and then stopped briefly. The lubricating oil reservoir should be full. Cooling water intakes should be checked to be sure they are opened. Hose clamps should be inspected for leakage. After the engine has been started, the fuel system should again be checked before the compartment is closed. Before getting underway, oil pressure should be checked and

the engine brought up to operating temperature. During operation, frequent regular checks should be made of oil pressure and water temperature.

As to fueling systems, fueling is one of a boat operator's most hazardous jobs. Always try to fuel the boat in good light — spills may not be seen in poorly lighted areas. Gasoline vapors are heavier than air and will not escape from low-lying pockets. An atmospheric concentration of gasoline vapor as low as one and one-fourth per cent is enough to create a mixture which may be sufficient to be within the explosive range. Do not allow smoking on or near the boat while fueling. Make sure all electrical equipment is cut off. Close all doors and hatches to keep gas fumes out — they are as powerful as dynamite and as sneaky as nitroglycerin. If you use portable tanks, fill them away from the boat. When full, put the caps on tightly and wipe them off. Throw the wiping rag away or store in a metal box. Keep the metal nozzle of the gas hose in contact with the tank at all times to prevent static spark.

When you are through fueling, open up the boat and air it out. Walk around the inside of the boat and give it the "sniff test," especially in low places. It is a good idea to wait a few minutes before you start the engine.

All fire extinguishers should be checked at regular



intervals — at least several times a year — to make sure they have not been tampered with and have not suffered corrosion or damage. Seals should be inspected to determine that the extinguishers have not been operated since last being discharged. Fire extinguishers are classed according to their size and type and must bear Coast Guard "Marine Type" approved labels. They are classified by letter and roman numeral according to the type of fire they are capable of putting out and the size of the extinguisher itself. The letter indicates the type of fire: A designates fires of ordinary combustible materials; B designates gasoline, oil or grease fires; and C designates electrical fires.

Despite all the precautions, fire will happen. Should you have a fire aboard that requires help, the signal to

failure of a mechanical safety device on a Zooney (five inch) rocket.

Another memorable fire disaster at sea occurred June 15, 1904. The steamboat, "General Slocum" burned in New York City's East River, and more than a thousand people perished. The fire was a holocaust with frenzied and hysterical passengers jumping overboard with their clothes on fire. Rotten canvas life-preservers fell apart as people fought over them. The fire hose did not work; it had been stuffed with a rubber disk to prevent water dripping on deck. By the time the disk was removed, the flames had begun to spread in the breeze created by the ship's headway. When the water pressure was turned up, the rotten hose sprouted a dozen leaks, leaving hardly a trickle to fight the blaze.

---

## **FIRES ON BOARD CAN BE AVOIDED**

### **BY FOLLOWING BASIC...AND COMMON SENSE ... PRECAUTIONS.**

---

use is "Mayday" repeated three times broadcast on 2182 kHz. There are, however, other ways of signaling distress. Slowly and repeatedly raising and lowering both arms outstretched at the sides is a valid distress signal and should bring aid. Additional information on distress signals is available from the Coast Guard.

American ship disasters involving fire have traveled a flaming corridor down the years. One of the saddest happened April 27, 1865, when the river steamer "Sultana" exploded near Memphis, Tennessee and sank. The Sultana, built to accomodate about 400 people, carried over 2,000 Union soldiers returning home from the Civil War, plus horses, mules and other cargo. The boiler of the Sultana was ancient and the boat disastrously overcrowded. After managing to survive the hardships of the Civil War, 1,450 soldiers lost their lives on the Sultana.

A more recent fire disaster at sea took place July 29, 1967, when fire and explosions erupted aboard the U.S. aircraft carrier, "Forrestal" off the coast of Vietnam. Planes were on the flight deck, ready to take off in seven minutes when a rocket went off, struck a jet fuel drop tank of an A-4 Skyhawk, and started a fire that became the worst Navy disaster since World War II. There were 134 sailors killed and 62 others injured. This disaster in the Gulf of Tonkin was triggered by the

The skipper of the "General Slocum," Captain Van Schaick, was arrested and sentenced to ten years in prison but that could hardly atone for the tragedy that might have been avoided. Most of the passengers who lost their lives were women and children, for the planned cruise was for 1400 members of St. Mark's German Lutheran Church on a day's outing at Locust Point on Long Island Sound. Perhaps the only good thing that came out of this dreadful calamity was a stringent reappraisal of streamboat inspection laws and broad changes in marine safety regulations.

The first fireboat to give aid to burning vessels was used in New York City harbor in 1800. It was powered by twelve men who used oars. A hand-operated pump was mounted on the boat which was stationed at the foot of Roosevelt Street on the East River and patrolled the docks and waterfront of New York City. The first fireboat with two-way radio equipment was placed in service in 1925 in Boston, Massachusetts.

Most fires at sea, as on land, can be avoided. Take all possible precautions to prevent them. Employ good judgement and common sense. Check and double-check equipment. Take no foolish chances. Stay alive!

The only flames we want to see along Virginia waterways are the flaming sunsets! They warm the heart but provoke no tears.

# It Appears To Me

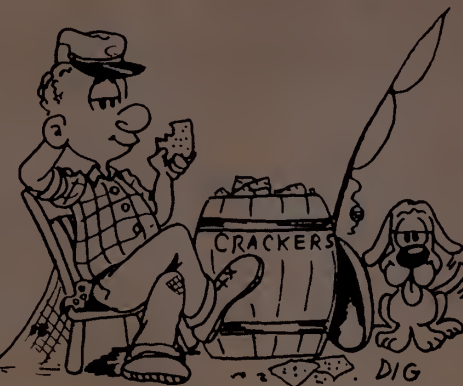
## By Curly

... A PERSON OUGHT TO HAVE ONE

Within the past few days I have had some interesting correspondence from Dr. Louis A. Helfrich, Extension Specialist, Fisheries at Virginia Polytechnic Institute and State University in Blacksburg. Lou informed me that there are three new publications about ponds, aquaculture and weed control that are available free to those of you who are interested. Publication No. 809 is titled "Controlling Aquatic Weeds and Improving Water Quality in Ponds and Lakes." Prepared by Helfrich and Diana L. Weigmann from the Department of Fisheries and Wildlife Sciences, this 16-page booklet covers specifics such as waterweed problems, recommended control methods, shading and biological control, to mention a few. The last page even contains a form which may be used if assistance is needed.

Helfrich cooperated on another publication with Donald L. Garling, of the Fish and Wildlife Service. They produced Publication MT 12 H, "Planning for Commercial Aquaculture," which consists of nine pages of facts, figures and feasible applications of this increasingly popular endeavor. After outlining the various stages of this operation, i.e., planning, training, pilot testing and finally commercial operation, the authors summarize by stating, "the potential for aquaculture is theoretically very high. A number of factors threaten the future expansion of aquaculture, such as water pollution and potential increases in efficiency of terrestrial agriculture. However, the interest in aquaculture, the anticipated funding and developmental support through the United States Department of Agriculture, and advances in technology and scientific knowledge will have a positive effect on the potential for aquaculture in the United States."

A third publication entitled "Pond Construction: Some Practical



Considerations," (Mt 11 H) was cooperatively done by Helfrich and Dr. Garland B. Pardue (Fish and Wildlife Service). Although only seven pages in length, the booklet is crammed with ideas, suggestions and facts which may just provide the information which you prospective pond builders have been seeking.

All three of these new publications are free for the asking from any of the numerous County Cooperative Extension Offices which are conveniently located throughout the Commonwealth.

For you really scientifically oriented folks I reckon "Inside The Cell" will be just about all you could wish for. Produced by The National Institute of General Medical Sciences, this 96 pager summarizes what recent discoveries have revealed about the cells that make up our bodies and how they do it. You can't beat the price ... free, by sending your name and address on one of those stick-on labels to Cell Book, National Institute of General Medical Sciences, Westwood Blvd. Room 9A05, Bethesda, Maryland 20014.

Your backyard can, if it isn't already doing so, be a haven for wildlife of many different shapes, sizes and persuasions. Write the National Wildlife Federation, 1412 16th St., NW., Washington D.C. 20036. Ask them for a free copy of "Invite Wildlife To Your Backyard" ... I think you will be glad that you did.

... FOR YOUR BOOKSHELF

It has been some time since a book the caliber of *Big Game of North America: Ecology and Management* has come down the pike. This comprehensive publication, which is a wee bit under 500 pages in length, is just the ticket for students of wildlife management, for you citizens who need back-up information in your continuing crusade for conservation, or for any wildlifer interested in adding to his professional clout. Published by that most highly respected organization, The Wildlife Management Institute, *Big Game* ... is certain to command respect on its own. Daniel A. Poole, President of the WMI, puts it this way in his foreword to the book:

"... Aside from its importance as a modern and comprehensive summary of the management of North America's interesting and spectacular large mammals, the book, taken as a whole, has still another dimension. Its many chapters testify to the fact that, given public support, cooperation and adequate funding, the wildlife profession is fully capable of maintaining populations of native wildlife within the capacity of natural habitats to supply needed food, water and shelter. The record attests to that fact. Many of the species covered in this book, now abundant, once were at perilously low population levels."

Worth every cent of the \$17.95 price tag, *Big Game of North America* is available at your book store or from Stackpole Books, Cameron & Kelker Sts., Harrisburg, PA 17105.

... AND THEN

President Lyndon Johnson said it during a conversation with Princess Margaret of Great Britain and her husband, Lord Snowdon: "I've learned that there are only two things necessary to keep your wife happy; first let her think she's having her way. And second, let her have it."



# Growing Up Outdoors

BY SANDY COLEMAN



## BABIES

Illustration by Diane Grant

Matt and Amy watched their cousin Nikki crawl about on the floor, grabbing for toys and smiling at her interested observers.

"She's so beautiful," Amy said of 10-month old Nikki. "I love to play with her." Apparently Nikki agreed, for as soon as Amy sat down on the floor with her, she began to crawl onto her lap. Amy was kept busy for some time with Nikki, retrieving toys that the baby threw and helping Nikki in the shaky steps that she was beginning to take.

Matt noticed that all of Nikki's toys were brightly colored, and many made some kind of noise. The baby especially liked a yellow, furry stuffed animal named Zak. He contented himself with watching the antics of his little sister and his baby cousin.

Later, as the two were in the back seat of the car on their way home,

Amy looked thoughtfully at her big brother: "I was once like Nikki, wasn't I, Matt? I had to learn to walk and talk and I wore a diaper, too? I know that I was a baby, but it seems like I was always like I am now. I can't remember not knowing how to walk and talk. But if that was me, why can't I remember anything about it?"

Matt thought for a few moments before beginning to answer his sister's question.

"Yes, you were once a baby. But people don't start remembering things permanently until they are older. We all go from being babies to finally being adults. Animals go through the same process, really. You and I are kids now, sometime we'll be teenagers and then we'll be adults like Mom and Dad. You were a funny baby, always crying and wetting your diapers," Matt said

to his sister with some feeling.

Amy laughed at her big brother. "I wish I had known you, then. I bet you did the same thing! Is it the same for animals?"

"Well, different species of animals are different and individual. Remember when Rover was a kitten? It took her a whole year, but by the end of that time she was an adult. It takes humans 18 years to go through the same process," Matt answered his small sister.

"What about deer? Or bears?"

"Well, like I told you, it is different for every animal. I think bears are adults in about three years and deer in a little more than one."

"Babies are awfully cute. Puppies and kittens are so small and they sometimes move funny. I remember when we went to visit Rover before we got her, she didn't have her eyes open! Mom told me that she would be that way for several weeks."

Amy became curious about the growing up process and began to do some reading on the subject.

"Did you know, Matt that the babies of a lot of animals are born in the spring, so they would be very young at this time of year. I was reading that raccoons are born in April or May and there are usually two to seven born at one time to a mother! Raccoons are also like cats and dogs because they are born with their eyes closed and don't open them for about three weeks. They stay with their mother through the spring and summer and she teaches them how to find food and a place to live and things like that. Then, they leave her in the fall and go out to live on their own. I guess they start their own families eventually and have babies of their own!"

The next week found the two visiting their young cousin again. In the time since their last visit the baby had learned two new words.

"Boy, she sure does learn fast," Amy said proudly. "I bet she's the smartest and prettiest baby ever born."

Matt could only nod his head in agreement.

# Endangered Species Update

## What is the status of Virginia's protected species?

Nearly 23 species of wildlife are currently protected under Virginia's 1972 endangered species legislation. Studies are currently underway to determine the exact status of threatened wildlife in our state and, perhaps, to point out future danger spots.

The Commission of Game and Inland Fisheries is conducting research either directly or under contractual arrangements on most of these animals. Financial help is provided through the Federal Endangered Species Grant-in-Aid Funds.

### Mammals

Work is currently underway to expand the range of Delmarva fox squirrels on the Eastern Shore in Accomack and Northampton counties. A team of researchers from Averett College have placed 150 nest boxes for the squirrels on the Chincoteague Wildlife Refuge which was identified as a suitable site. These are examined regularly and current indications are that the program has been successful. The squirrels are apparently multiplying, with the local population currently estimated at about 100 to 200 squirrels.

Bats have a bad reputation with most of us, but are, nevertheless, necessary in the scheme of things. A VPI scientist has found a cave where the rare Indiana bat is living. A population of between 500 to 1000 bats were reported in winter residence in the Wise County cave. As for the big-eared bat, they have been located in a cave in Burkes Garden and there is evidence that the gray bat may also inhabit a cave in Wise County.

By far the most intriguing to many is the cougar. Long reported as extinct, most deny his presence in the state today. Still, there are those who hope and those who continue to search for evidence.

Signs of the cougar have been scarce since the end of the 19th century, when this once common predator seemed to vanish from the eastern United States. The cougar was last identified in Virginia from a kill reported in Washington County in 1882.

The cougar has been fully protected in Virginia by

action of the Game Commission since 1971. Since July, 1977 when investigations were begun, 40 cougar sightings have been investigated in the state. In 1978 a specialist at the Smithsonian Institution in Washington identified the track of a cougar from a plaster cast made in western Virginia — a positive sign of the animal's existence in the state.

Joe Coggin of the Virginia Game Commission is leading the investigation currently being intensified to discover the true status of the cougar in Virginia.

### Bird Studies

Most experts are optimistic about the future of bald eagles in the Commonwealth. Statistics showing a recent rise in population have been gathered by the Chesapeake Bay Bald Eagle Recovery Team, the Raptor Information Center, under contract to the Virginia Game Commission and an affiliate of the National Wildlife Federation, and by other interested observers and scientists. In 1977, 33 active bald eagle nests were observed in the state, in which 18 young birds were produced. Another 18 were produced in 1978 from 37 active nests. Experiments are being conducted with egg transplants from captive birds but have so far proved to be only marginally successful. Even on the Kepone plagued James River eagles have been seen recently attempting to nest. Future plans for observing and studying the bald eagle include initiating radio-telemetry tracking of fledglings and monitoring at least one active nest with remote control video cameras.

Peregrine falcons were reported wintering in Tidewater during the 1977-78 winter season, with at least one bird using a bank building in Norfolk as a winter roost. Ten birds were observed in the Tidewater area and more than three dozen were observed on the Eastern Shore.

Five peregrine chicks were placed in an abandoned Coast Guard look-out tower on Cobb Island off the Eastern Shore. Unfortunately, two of the chicks were blown from the tower during a storm so the experiment





*Young Cougar by Alan Carman*

was only partly successful. Plans are now underway to locate a better site and counts and records will continue to be made of migrating birds.

Dr. Mitchell Byrd of the College of William and Mary and his associates are currently looking into the status of the red-cockaded woodpecker in Sussex, Surry, Isle of Wight, King George, Southampton and Brunswick counties, as well as in Virginia Beach and Suffolk. More than 40 sites with one or more cavity trees were located; however, many appeared inactive to the observers. Nesting was observed at six sites in 1977 — but this was lowered considerably to the two seen in 1978. As a result of the fact that only two to five per cent of the counties in Virginia currently have timber of a sufficient age that would support colonies of the bird, serious concern is now the feeling among the biologists in relation to the chance for a come-back of the red-cockaded woodpecker. However, Union Camp Corporation is setting aside 200 acres of suitable habitat in Sussex specifically for the woodpecker. This will provide valuable research ground for Dr. Byrd and his associates.

#### Marine Life

Four sea turtles are currently protected in Virginia: the Atlantic ridley, the hawksbill, the leatherback and the loggerhead. Loggerheads are the only sea turtles to nest on Virginia's beaches.

Portions of the Clinch and Powell Rivers have been designated as "Critical Habitat" for the slender chub, a

freshwater fish. The yellowfin madtom and spotfin chub have been collected in the state, but not since their official designation as endangered.

The short nose sturgeon is a coastal anadromous species that ascends coastal plain rivers to spawn. With Sea Grant assistance the Virginia Institute of Marine Science is conducting an educational campaign to help people distinguish the endangered short nosed sturgeon from the more common Atlantic sturgeon.

In May 1978, Virginia Polytechnic Institute and State University, in cooperation with the Commission of Game and Inland Fisheries and VIMS, sponsored a symposium on the "Endangered and Threatened Plants and Animals of Virginia." The purpose of the session was to compile data on the status of jeopardized species in the State from which to formulate a list of species which are endangered, threatened, or "of special concern." In addition to biological information on these plants and animals, the proceedings of the symposium (to be available through VPI's Center for Environmental Studies) will contain research, management, and education suggestions for state and federal planners, scientists, and citizens.

Little is known of the nine endangered mollusks' status in Virginia. Research is currently being conducted to expand this knowledge by the Tennessee Valley Authority under contract to the Virginia Game Commission. Virginia Polytechnic Institute and State University is also scheduled to begin observing and reporting on the status of mollusks in the state.





*The VWF campers quickly became expert at handling canoes while paddling on Lake Drummond.*

# VWF CAMP: AN INVESTMENT

The slight figure in work clothes, baseball cap and sneakers, untied the large manila rope from the pier and hopped aboard the heavily laden tour boat. "Everybody ready?" he called out. "Yes," shouted a chorus of 25 junior and senior high students, enthusiastically encouraging their guide to "get the show on the road."

The road in this case was a three and a half mile long canal connecting Lake Drummond in the Dismal Swamp, with the Intra Coastal Waterway in Chesapeake. Alva Duke, who has been conducting tours into the swamp longer than he cares to remember, opened the throttle and the boat slowly inched away from the dock and began the 45 minute journey into the interior of the swamp. Even to the casual eye this was not a typical group of tourists out for an afternoon's excursion into the Great Dismal. Along with the exuberant passengers, the boat was loaded with the markings of a full fledged jungle expedition. Sleeping bags, packs, tents, boxes of food and provisions, pots, pans, and piled on top of all this, an armada of aluminum canoes. No wonder *The African Queen* as a young adventurer had aptly named Alva Duke's boat, made way with great patience as it plied the murky waters leading to the U.S. Army Corps of Engineers Preserve at the Lake Drummond spillway.

Most visitors assume that three mile wide Lake Drummond is the lowest point in Dismal Swamp, draining the land around it. That may seem logical, but exactly the opposite is true. The lake is actually higher than most of the surrounding land, and would itself soon be drained by the Intracoastal Waterway were it not for the spillway administered by the Corps of Engineers. By carefully controlling the amount of water flowing through the spillway to compensate for variations in rainfall, a fairly constant water level can be maintained in Lake Drummond. In conjunction with the operation of the spillway, the Corps also operates a primitive camping facility on the preserve. For the next three days, this site would be home for the 25 new "swamp rats" approaching in Alva Duke's tour boat.

The entire project, billed as an Enviro-Adventure, was conducted under the auspices of the Virginia Wildlife Federation in cooperation with Old Dominion University. Actual administration of the camp was under the direction of Dr. Gerald Levy, Director of Dismal Swamp Studies at the university, assisted by a staff of Old Dominion graduate students. Theirs was the task of coordinating the myriad of details that go into providing food, shelter, recreation, and a curriculum for the adventurous. "The task was made especially difficult since we couldn't benefit from any-





*Besides just having a good time, the youngsters learned much about the delicate ecology of the Dismal Swamp.*

## ...IN THE FUTURE by Joe Wiseman

one else's mistakes," pointed out Dr. Levy. That's because the Dismal Swamp Enviro-Adventure was a pilot project in the ongoing outdoor youth education program of the Virginia Wildlife Federation.

This program is unique in several respects. First, its stated objective is environmental education. While recreation is obviously necessary to the success of the program, it is none-the-less a by-product, not the purpose of the camp. Second, the attendees are selected to represent a cross section of today's young people — not just future wildlife managers, game biologists, foresters, and others pursuing outdoor careers. Third, the camp was provided at no cost to the participants. The reason for this unusual program is simple. The Virginia Wildlife Federation is making a long term investment in the future of conservation. If today's future business leaders, housewives, and professional people can become more sensitive to environmental problems, then later as tax payers and voters they will be more inclined to make the hard choices necessary to solve the problems. That's why the camp is an investment — one that could yield rich dividends for years to come.

With great commotion and clatter, the passengers on the *African Queen* unloaded their gear and themselves, and began establishing camp and preparing their first

meal in the wilderness. To say the next few hours went smoothly would be an exaggeration. Most had never pitched a tent, and even fewer could be classified as campfire gourmets. Somehow it all got done, however, with occasional coaxing from Dr. Levy and his staff. Yet all of this was of little significance to what was yet to come — canoe classes.

It had been decided in the early planning stages that transportation within the swamp would be by canoe. The canals, ditches, and of course Lake Drummond offer many miles of ideal canoeing trails and help to keep the experience on an intimate level. Time had therefore been allotted for "Canoe Orientation and Technique." After listening to the staff explain the do's and don'ts of proper canoe handling, the students took to their boats and preceeded to engage in the water borne version of demolition derby. They ran races and obstacle courses, ran into each other, into trees, into the bank and in the process, brought their instructors to the edge of insanity. One young man from the mountains of southwestern Virginia, even turned his canoe upside down and attempted to straddle and ride it like a horse. He found that to be a wild ride indeed. In the space of an hour, the group was completely comfortable and at ease in their canoes, and quite capable of performing any maneuver required of them. So





*Novices at canoeing and swamp ecology, the campers left with a good understanding of both.*

much for modern and up-to-date teaching methods.

Dr. Levy and his staff balanced recreational activities with outdoor classroom sessions on swamp history, ecology, plant and animal life, and a campfire program featuring myths and ghost stories of the Great Dismal Swamp. Each morning while breakfast was being prepared, several students checked the live traps baited with peanut butter the night before. The total catch for the three days was one very small but friendly field mouse. After entertaining and being entertained by the group, he was released unharmed and full of peanut butter.

One of the high points of the three day retreat was a day long canoe trip on Lake Drummond. The weather, and more importantly the wind, cooperated for the occasion leaving the lake's surface serene and still. The sight of ancient cypress trees rising out of the mist-shrouded waters on the long twisted tentacles that make up the complex root system was a sight long to be remembered. That mystical scene changed as the sun burned away the early morning mist, and light breezes brought the lake's surface to life.

The early hours of the final day were spent packing up and preparing to load all the gear onto the *African Queen*. When word came that the tour boat was out of commission due to mechanical failure, the staff hung

their heads in despair, while the swamp rats cheered. Fortunately the Corps of Engineers came to the rescue, and using their power boat ferried the heavy gear to the landing at Route 17. This left the kids in their canoes, so delighted at the turn of events that they organized a canoe race back to the landing and their waiting parents.

Important lessons were learned during those brief days in the swamp, which will be remembered long after the mosquito bites and red bugs have been forgotten. The balance of nature is a delicate mechanism, and the demands made by man often throw the scale badly out of kilter. For a few days these young people were able to observe a small part of that complex natural world.

Expanded plans for next year are already underway, calling for additional facilities and curriculum. According to Walter Leveridge, President of the Virginia Wildlife Federation, "The stakes are too high and opportunity too great to be faint hearted. The Virginia Wildlife Federation is excited about the future and confident in our young people. That's why we started this program and why we will continue to support it. Youth education is central to the propose of the Virginia Wildlife Federation and potentially our greatest contribution to conservation."

VIRGINIA WILDLIFE





## VIRGINIA FEDERATION 13TH CONSERVATION AWARDS PROGRAM

The Virginia Wildlife Federation believes that those who work so tirelessly to save and conserve America's priceless natural resources should receive public praise, recognition and appreciation. No nation has been more blessed with natural riches and beauty. No nation can remain strong, its people healthy and happy, its way of life full, rich and meaningful, without wise use, conservation and preservation of those same priceless resources. By recognizing and encouraging conservation leaders the VWF believe America's future can better be secured. **Virginia Wildlife** readers are invited to nominate their favorite conservation leaders for one of this year's conservation awards. Awards will be presented on October 27 at the Mariner Resort Motor Inn at Virginia Beach.

Sponsored by The Virginia Wildlife Federation and Sears Roebuck and Co.

### CATEGORIES

Conservation Educator  
Conservation Organization  
Soil Conservationist  
Water Conservationist

Youth Conservationist  
Conservation Communicator  
Conservationist of the Year  
Clean Air Conservationist  
Hunter Educator

Legislative Conservationist  
Forest Conservationist  
Wildlife Conservationist  
River Conservationist

*Virginia Wildlife Federation*  
INCORPORATED  
**CONSERVATION AWARDS FOR 1978**  
NOMINATION FORM

To make a nomination, send two copies of this form and all attachments to: Conservation Awards Center, P.O. Box 3609, Norfolk, Virginia, 23514.

NOMINEE:

RECOMMENDED BY:

NAME \_\_\_\_\_

NAME \_\_\_\_\_

COMPLETE ADDRESS \_\_\_\_\_

TITLE \_\_\_\_\_

AWARD CATEGORY \_\_\_\_\_

COMPLETE ADDRESS \_\_\_\_\_

Please specify one of the eleven categories for which nomination is made. Use a separate nomination form for each award category and for each individual or group nominated.

NAME OF MEMBER CLUB \_\_\_\_\_

DATE \_\_\_\_\_

Please attach two (2) copies of a resume of achievements not to exceed two typed pages. Include organization memberships, affiliations, past achievements, past recognition, specific acts for which recommendation is based, and other references for comparison. A full documentation is needed by the judging committee.

**NOTE: NOMINATIONS MUST BE POSTMARKED NO LATER THAN MIDNIGHT, AUGUST 15, 1979.**

# Outdoor Notebook

## BETTER BOATING COURSE

### VIRGINIA BETTER BOATING A Guide to Safety Afloat



Safety afloat is a prime concern of boaters today who value both their lives and their property!

The *Virginia Better Boating Course*, available from the Game Commission, is the perfect way for newcomers to learn more about boating safety and to test what old-timers already know. It's the best way possible to insure an accident-free boating career.

The course, available at the cost of \$1.00, is divided into chapters with a quiz at the end of each one and can be used as an individual workbook or as a text in a better boating class. Upon completion of the course,

there is a comprehensive quiz that tests what the student learned. A satisfactory score earns the applicant a certificate stating that he has successfully completed the course, along with a wallet card with the same information.

The course is available by sending \$1.00 to: Virginia Game Commission, Better Boating Course, P.O. Box 11104, Richmond, Virginia, 23230. Please make checks payable to Treasurer of Virginia.

Why not make sure that you know as much as you can know about boating safety. You're the one to benefit in the long run.

## NEW WILDFLOWER BOOK

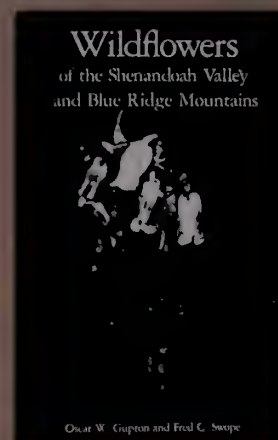
*Wildflowers of the Shenandoah Valley and Blue Ridge Mountains*, a new publication from the University of Virginia Press, is the kind of identification book that even the novice can understand and appreciate.

Oscar W. Gupton and Fred C. Swope have keyed the flowers by color, a trick that makes it especially easy to locate just what it is you are looking for. Additionally, the color photographs are large enough to allow for precise identification. The

descriptions of the plants are written in nontechnical language requiring neither background information about plant structure nor the use of a glossary.

Virginians are justifiably proud of the beauty of this part of our state and this book goes a long way towards illustrating just why this is so. The book covers 285 species of wildflowers in one of the most beautiful areas of the United States.

The book, suitable for any coffee table as well as field use, sells for \$10.95.



## TED WILLIAMS INTRODUCES GAMEFISHER AWARDS

Sears, Roebuck and Co. and Ted Williams, fishing tackle advisor, are making awards to people who catch record or near-record fish on Sears rods and reels.

Recipients will be designated Gamefisher Award Winners, in conjunction with Sears new line of premium rods and reels. Each will receive a parchment certificate with name, date and details of the catch.

Suitable for framing, it will be signed by Ted Williams who will also send winners a personal note of congratulations. In addition, each winner will receive a special Gamefisher fishing cap and two award patches.

Williams, former baseball great and authority on fishing, has been chairman of the advisory staff since 1960. He helps research, design and field-test fishing equipment.

To win a Gamefisher award you must have caught a record or near-record fish of any kind on a Sears rod and reel, anywhere in the world. Send a photo of you and your fish with a note detailing the type of catch, length, weight, body of water, bait or lure, and type of Sears tackle used to: Game Fisher Award, D/703 (BSC 40-13), Sears, Roebuck and Co., Sears Tower, Chicago, IL 60684. Also give your opinion of Sears fishing equipment.

For further details about the award, contact the sporting goods department of your Sears store.



# ANSWER TO GAS WOES

With the recent rumors of gas curtailment and regulation, millions of Americans are pondering the fate of their family's spring and summer vacations.

Airlines have already cancelled some flights temporarily and the proposed "no weekend gas sales" law may keep many from planning family vacations this year. Yet, there are alternatives.

Paul Mulready, president of the American Fishing Tackle Manufacturers Association, suggests families re-evaluate their vacation plans in light of the gas shortage situation. "Try to discover what your key objectives are. Why are you going on vacation. What is the purpose of a family vacation? If your answers are something like 'to relax, to be together as a family, to have fun,' then consider a family fishing trip."

Fishing is enjoyed by over 63 million Americans. Of that number over 20 million are women and nearly the same amount are children under 17. Fishing enthusiasts, fishing locations and fishing styles vary from coast to coast. "Some find it a total escapist sport," says Mulready, "where a harried executive can be alone, away from phones. Others find the challenge of fishing swift

streams, tricky rivers and expansive oceans a constant source of excitement in the most sociable of all settings... the great outdoors."

Fishing novices needn't fear cost or lack of expertise. According to the American Fishing Tackle Manufacturers Association the average "starter" equipment should cost no more than \$25. Department stores, sporting goods stores and tackle dealers have trained professionals on staff that can advise you on choosing the best gear to fit you and the type of fishing you plan to do. "The beauty of fishing is that it is so simple to learn," Mulready claims. "Half the fun of a first family fishing vacation will be the excitement and sharing in teaching each other how to fish."

Because of gas shortages, Mulready suggested travelers consider the following when planning their trips:

-1. Contact the Game Commission for maps and information on nearby streams, rivers and lakes that require little travel time.

-2. Set up an RV pool. If you have an RV and want to take it out, take along another couple or family.

-3. Let this one big trip replace several short, weekend trips you might otherwise have planned.



## NEW RECORD

Tommy E. Adkins, Jr. of Danville is the new record-holder for muskellunge caught in Virginia waters.

Adkins caught a 37 lb. 9 oz. muskie in Smith Mountain Lake on April 16, 1979, thereby besting the former record-holder, E. L. Addington, who caught his 36 lb. 8 oz. muskie in the Clinch River on March 8, 1977. The new record muskie measured 47½ inches in length.

The world record muskie, 69 lb. 15 oz. was caught in New York's St. Lawrence River on September 22, 1957 by Arthur Lawton.

## Virginia Wildlife

BY SUBSCRIBING TO VIRGINIA WILDLIFE, YOU SAVE 50% OFF THE NEWSSTAND PRICE! SEND YOUR CHECK OR MONEY ORDER TO:

Virginia Wildlife  
P.O. Box 11104  
Richmond, Virginia 23230

\$3.00 FOR 1 YEAR OR \$7.50 FOR 3 YEARS

Name \_\_\_\_\_ New \_\_\_\_\_

Address \_\_\_\_\_ Renewal \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Allow 6-8 weeks for delivery.

Credit Warden No. \_\_\_\_\_

# On The Waterfront

EDITED BY JIM KERRICK

Much of my mail as a boating writer asks what products to use for what, and where to buy them. Shopping is a headache to all boatmen. Those who live in big boating areas have a large choice of marine stores, but often at high, yacht prices. Those in non-boating areas often can't find even the most common boat needs.

Here are some items found in the most unexpected places, and at unexpected prices, to do yeoman duty aboard your boat.

**Toy shops.** Buy a 36-inch inflatable child's swimming pool for less than \$2. Deflated it's small as a stack of pancakes. Blown up it's ideal for hand laundry while cruising, washing sails, and bathing children. A water pistol is an ideal toy on the water, and it's also good for squirting water to tame a charcoal fire.

**Novelty catalogues.** Lots of surprises here for boat use. Order from a variety of plastic gimmicks which can ease boating life. My favorites include disposable plastic gloves which can be worn on the boat when doing greasy, quick jobs, and shower shoes which fit like slippers. These are easier to wear than clogs, yet protect the family's feet in marina showers.

**Auto supply store.** Buy the type battery filler which is used by service stations, and fill it with stove alcohol. It fits the small opening perfectly and shuts off automatically when the reservoir is full. A pro-type parts cleaner is a great plus if you do a lot of engine maintenance. You'll also find scores of boatable items from hose clamps to belts and filters. Just make sure that any items you buy here are rated for marine use, especially if you boat in saltwater.

**Hardware stores.** Quick-disconnect hose fittings can be used in many spots around the boat. I use one to attach a sink sprayer to my cockpit faucet to make an after-swim shower. Another attaches to a deck fitting, to plumb city water into the boat when at the dock. I also bought a Y for use at times when I have to share one marina faucet with



## Bright Buys For Your Boat

another boat. Dishpans are great dividers in stowage areas. A plumber's helper does many jobs on the boat, from clearing drains (sink, engine intake, cockpit drains) to plugging a thru-hull hole underwater while you make repairs.

**The Grocery Store.** Buy waterless hand cleaner for efficient clean-up of almost anything with a minimum of water. A cleanser called Zud is great for waterline mustache and Bar Keeper's Friend cleans brass. Lighter fluid and nail polish remover will both remove beach tar (beware the fire hazard). Ivory soap helps tap blind holes and can be used to coat the outside of cooking pots used over a sooty fire. (The soot comes off with the soap when you wash them.) For the head, buy a vegetable brush and vinegar. This brush is shaped right, but takes a third the space of a proper loo brush. A cup of vinegar in the head once a week dissolves salt build-up if you have it. Vel bar soap will foam in salt water. To remove grease stains from your clothes, rub well with vegetable shortening, then launder in hot, soapy water. Buy extra baking soda

for battery terminals, general cleaning and for use as a deodorizer in bilges and icebox.

**Camping and RV Suppliers.** Many boatable items here, from can stackers and plastic products for the galley to folding dish drainers. If your shower is part of the head, look for a toilet paper roll which has a cover to keep paper dry.

Steer away from shoddy construction, and from metals which will rust or corrode on your boat.

**Aircraft Suppliers.** I've found wonderful bits and pieces in aircraft junk yards, and they are always top quality. Aircraft surplus outfits are a great source of exotic engine instruments like exhaust gas temperature gauge, and I made part of my self-steering vane from a scrap part from a DC-3. Most airports sell cleaner for plexiglass windshields and windows. If you have these easily-scratched ports, they need special care.

Outfit your boat by shopping, shopping and more shopping. More often than not, you'll find the bluebird in your own backyard.—Gordon Groene





# In Nature's Garden

## Campanulas

BY ELIZABETH MURRAY

I seem always to be emphasizing how much confusion is produced by using common names for wildflowers. Perhaps nowhere is this truer than for bellworts, bellflowers and bluebells. In Virginia, the name bellwort is usually given to *Uvularia*, the little yellow nodding member of the lily family. Bluebells in this state are generally *Mertensia virginica*, in the borage family. In England the bluebell is the wild hyacinth, *Endymion nonscriptus*. And the famous Blue Bells of Scotland, title of the old Scottish song, "Oh where, and Oh! where is your Highland laddie gone?" are campanulas. The Campanulaceae is often called the bellflower family, and in this area the common name bellflower is probably best applied to members of the genus *Campanula*.

Many campanulas are introduced and naturalized from Europe and Asia, but a quite frequent native species in our mountain flora, blooming at the beginning of summer, is the tall bellflower, *Campanula americana*. It may grow as high as six feet, although the stems never seem quite strong enough at ground level to hold it fully upright, and they often lean out of the earth at rather a 'straggly' angle. The five-petalled flowers are somewhat bell-shaped at the base, although the tips of the petals are free and spread outwards in a star formation. Flowers are a brilliant light blue. There are five free stamens surrounding a long central style. The stems are sometimes weakly branched, but more often simple. The alternately arranged leaves are long, pointed at both ends and grow most of the way up the stem. The flowers appear in the axils of the leaves, the lower ones opening first.

*Campanula americana* is rare in the Piedmont, preferring the rich, moist soils of woodland edges in the mountains. There are some fine stands near the top of the road that leads up to Mountain Lake in the

southwest part of the state. At lower altitudes, one finds the pretty little Venus looking glass, *Specularia*, a member of the same family which blooms later on in the summer.

A much more delicate member of the genus is *Campanula divaricata*, the harebell. This rarely grows over eighteen inches high, has a highly branched stem, and numerous small, pale blue flowers. The harebell prefers a much drier habitat than the tall bellflower, growing on rocky slopes and around open, well-drained woods. Its blooms later, coming out in July and lasting well into September in some localities. *C. divaricata* is found as far south as Georgia and Alabama, west to Kentucky and sometimes as far north as New Hampshire, although in the north it is mainly replaced by a very similar species, *Campanula rotundifolia*. This latter species is the real Blue Bell of Scotland.

Many species of campanulas are

cultivated for their attractive flowers. Best known of these are Canterbury Bells, with their enormous, showy flowers, blue, purple, pink and white, which are so often seen in English herbaceous borders. But our native ones are tricky to transplant, and so it is best to leave them alone and admire them as they grow in the wild.

The name campanula comes from the Latin word for bell, *campana*, and the ending merely provides a diminutive, so that the name of the flower becomes 'little bell'. *Rotundifolia*, of course, means 'round-leaved' and *divaricata* means 'wide-spread' or 'straggling'.

The lobelias are often included in the Campanulaceae, and some of them have been used for their medicinal properties. However, campanulas themselves are of little economic value, and must be appreciated solely for their attractive flowers, fortunately not a difficult task.



Illustration by  
Lucile Walton







# The American Kestrel

**T**he American kestrel has been known since colonial times as "sparrow hawk." Only with the recent revision of the official checklist has it been given the name, kestrel. And the new name seems to be catching on, fortunately.

Fortunately, for several reasons. Chiefly because "sparrow hawk" is a sad misnomer. The bird seldom preys on sparrows and is not a hawk at all, but a falcon.

It is fortunate, too, because the change helps to preserve the clarity and purity of the language. In the original, earlier sense of the word (and in modern usage in England) hawks were those species which preyed on other birds — the *accipiter* group. There was, even in common parlance, a distinction between the hawks and the falcons, buzzards and harriers (all of which, through ignorance and force of habit, are called "hawks" in North America). The falcons were further separated: kestrel, merlin, hobby and peregrine.

Fortunate in yet another aspect is the dropping of the term "hawk." The mere word carries a stigma. To some it connotes fierce aggression, blood-thirsty killing. Some farmers and sportsmen still think that "the only good hawk is a dead hawk."

It is surprising that the settlers did not at once attach the name kestrel to the American bird. The European species, similar in color and behavior, was common and familiar to most Englishmen. The American kestrel is brighter colored, its upper parts terra cotta red, the wing coverts a slaty-blue. The two bold vertical marks on the head are more prominent in the new world kestrel. (Females are generally paler, with more barring on the back and wings.)

Kestrels range over nearly the entire planet earth; they are absent only where it is very cold or too densely forested. Nine species are recognized, only one of which is American. These American kestrels, ranging from the tree line in Alaska and Canada to Tierra Del Fuego, have been divided into fourteen species.

Many of these forms are sedentary, remaining as permanent residents in one area; others, that breed in

the north, are highly migratory. During September and October they move south, most of them following coastal routes, or crossing plains and deserts. They do not follow the mountain ridges as closely as do some raptors.

In Virginia, migrating kestrels seem to be coast-oriented. There are often concentrations of them at Cape Charles and on the islands in the lower Chesapeake. The prospect of a long over-water crossing must hold them back temporarily.

Resident kestrels begin nesting activities in March. The shrill "kily, kily, killy," uttered by courting pairs, is an indication that a nest site has been chosen.

Usually it is in a tree cavity of some sort, either a natural hole or a woodpecker excavation. Nooks and crevices in buildings are suitable as well, as are large nesting boxes, like those intended for squirrels or wood ducks.

The eggs, four to five, and varying in color from white through cinnamon, are laid in April (although clutches have been recorded in Virginia as late as August 4). Such late nesting is likely the result of an aborted earlier attempt, rather than an indication of a second brood.

It takes from three to four weeks for the young to hatch. At first they are but scantily covered with whitish down, but soon develop "pin-feathers" of brown and ochre. Even at this early age, the sexes differ in color: the females are darker, with barred tail feathers.

Food given the little hawks differs little from that eaten by the adults. At first, the parents tear the prey into small pieces, and feed each youngster individually. In two weeks, the young are strong enough to dismember without help the food brought to them.

Stomach examinations and field observations have shown that more than half of the food taken by kestrels consists of insects, mostly grasshoppers. Another fourth of the diet is made up of rats and mice. A smaller percentage of small birds, frogs and snakes is taken.

# National Safe Boating Week June 2 - 10



Contact the Coast Guard Auxiliary  
for a Courtesy Marine Examination.

